

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of: A. Cuthbertson Group Art Unit: To be assigned
Serial Number: To be assigned Examiner: To be assigned
Filing Date: January 18, 2002
Title: Process for the Deprotection of Protected Thiols

First Preliminary Amendment

Honorable Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

Sir:

Please consider the following amendments and remarks in connection with the prosecution of the captioned application, which is a continuation of international application number PCT/GB00/02796 filed July 19, 2000. This application also claims priority to application number 9916919.5 filed July 19, 1999, application number 0003926.3 filed February 18, 2000, and application number 0007865.9 filed March 31, 2000 all in Great Britain. Additionally, this application claims the benefit of United States provisional application number 60/146,866 filed August 3, 1999.

In the Specification

Please amend page 1, line 3, by inserting the following sentence and heading:

-- This application is a continuation application of international application number PCT/GB00/02796 filed July 19, 2000, the entire disclosure of which is hereby incorporated by reference.

Background of Invention--

Please amend page 2, line 33, by inserting the following heading:

--Summary of Invention--

Please amend page 3, line 17, by inserting the following heading:

--Detailed Description of the Invention--

Please amend page 7, lines 1-2, as follows:

Examples

The following non-limitative Examples serve to illustrate the invention, but are not intended to be illustrative of all embodiments.

Please amend page 13, line 17, by inserting the following paragraph:

-- It is apparent that many modifications and variations of the invention as hereinabove set forth may be made without departing from the spirit and scope thereof. The specific embodiments described are given by way of example only, and the invention is limited only by the terms of the appended claims.--

In the Claims

Please amend page 14, line 1, as follows:

[CLAIMS]

What is claimed is:

Please amend claim 1 as follows:

1. (once amended) A process for the deprotection of an Acn-, MBzl- and/or tBu-protected thiol in the absence of a silyl chloride which comprises reacting said protected thiol with an acid in the presence of an oxidising agent at a temperature sufficient to effect deprotection and generation of disulphide bonds.

Please amend claim 2 as follows:

2. (once amended) [A]The process as claimed in claim 1 wherein said acid is trifluoroacetic acid.

Please amend claim 3 as follows:

3. (once amended) [A]The process as claimed in [either one of claims 1 or 2]claim 1 wherein said oxidising agent is DMSO.

Please amend claim 4 as follows:

4. (once amended) [A]The process as claimed in [any one of claims 1 to 3]claim 1 wherein deprotection is effected using a TFA/DMSO mixture comprising 1 to 20% DMSO.

Please amend claim 5 as follows:

5. (once amended) [A]The process as claimed in [any one of claims 1 to 4]claim 1 wherein said protected thiol is present in a peptide.

Please amend claim 6 as follows:

6. (once amended) [A]The process as claimed in claim 5 wherein said peptide comprises at least two tBu protected thiols and/or at least two AcM or MBzl protected thiols.

Please amend claim 7 as follows:

7. (once amended) [A]The process as claimed in [any one of claims 1 to 6]claim 1 wherein tBu protected thiols are deprotected at room temperature.

Please amend claim 8 as follows:

8. (once amended) [A]The process as claimed in [any one of claims 1 to 7]claim 1 wherein Acn or MBzl protected thiols are deprotected at temperatures of 30°C or above.

Please amend claim 9 as follows:

9. (once amended) [A]The process as claimed in claim 8 wherein Acn or MBzl protected thiols are deprotected at temperatures of 50°C or above.

Remarks

Applicants have amended the specification to cross reference the parent application which is a PCT application designating the United States. Applicants have also amended the specification to add the required headings and move the text to be in the required order.

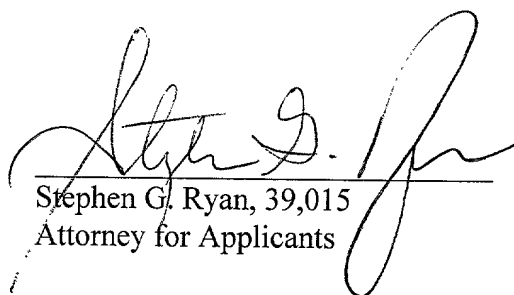
Applicants have amended claims 1-9 to more fully conform with U.S. practice and to delete multiple dependencies. A version of the claims marked up to show the amendments, as well as a clean version of the claims encompassing the amendments, is attached hereto.

Applicants are submitting herewith a copy of the International Search Report which issued on International Application number PCT/GB00/02796, of which the

present application is a continuation. All of the publications cited in the International Search Report are listed on the attached Information Disclosure Statement.

Applicants respectfully assert that all amendments are fairly based on the specification, and respectfully request their entry.

Respectfully submitted,



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Claims (marked-up version showing amendments)

[CLAIMS]

What is claimed is:

1. (once amended) A process for the deprotection of an Ac- and/or tBu-protected thiol in the absence of a silyl chloride which comprises reacting said protected thiol with an acid in the presence of an oxidising agent at a temperature sufficient to effect deprotection and generation of disulphide bonds.
2. (once amended) [A]The process as claimed in claim 1 wherein said acid is trifluoroacetic acid.
3. (once amended) [A]The process as claimed in [either one of claims 1 or 2]claim 1 wherein said oxidising agent is DMSO.
4. (once amended) [A]The process as claimed in [any one of claims 1 to 3]claim 1 wherein deprotection is effected using a TFA/DMSO mixture comprising 1 to 20% DMSO.
5. (once amended) [A]The process as claimed in [any one of claims 1 to 4]claim 1 wherein said protected thiol is present in a peptide.

6. (once amended) [A]The process as claimed in claim 5 wherein said peptide comprises at least two tBu protected thiols and/or at least two Acn or MBzl protected thiols.
7. (once amended) [A]The process as claimed in [any one of claims 1 to 6]claim 1 wherein tBu protected thiols are deprotected at room temperature.
8. (once amended) [A]The process as claimed in [any one of claims 1 to 7]claim 1 wherein Acn or MBzl protected thiols are deprotected at temperatures of 30°C or above.
9. (once amended) [A]The process as claimed in claim 8 wherein Acn or MBzl protected thiols are deprotected at temperatures of 50°C or above.

Claims (clean version encompassing amendments)

What is claimed is:

1. (once amended) A process for the deprotection of an Ac- and/or tBu-protected thiol in the absence of a silyl chloride which comprises reacting said protected thiol with an acid in the presence of an oxidising agent at a temperature sufficient to effect deprotection and generation of disulphide bonds.
2. (once amended) The process as claimed in claim 1 wherein said acid is trifluoroacetic acid.
3. (once amended) The process as claimed in claim 1 wherein said oxidising agent is DMSO.
4. (once amended) The process as claimed in claim 1 wherein deprotection is effected using a TFA/DMSO mixture comprising 1 to 20% DMSO.
5. (once amended) The process as claimed in claim 1 wherein said protected thiol is present in a peptide.

6. (once amended) The process as claimed in claim 5 wherein said peptide comprises at least two tBu protected thiols and/or at least two Acn or MBzl protected thiols.
7. (once amended) The process as claimed in claim 1 wherein tBu protected thiols are deprotected at room temperature.
8. (once amended) The process as claimed in claim 1 wherein Acn or MBzl protected thiols are deprotected at temperatures of 30°C or above.
9. (once amended) The process as claimed in claim 8 wherein Acn or MBzl protected thiols are deprotected at temperatures of 50°C or above.